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10/634,277	08/05/2003	David Alan Burton	SJO920020111US1	7126

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KUNZLER & ASSOCIATES
8 EAST BROADWAY
SUITE 600
SALT LAKE CITY, UT 84111

EXAMINER	
DARE, RYAN A	

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 11/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/634,277	BURTON ET AL.	
	Examiner	Art Unit	
	Ryan Dare	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08/05/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/05/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-5 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In the specification on page 7, line 22, it is disclosed that a computer readable storage medium can be an electronic signal on a system or network. The Examiner believes that the computable readable program code of claims 1-5 may thus be interpreted as being embodied on a non-statutory computer readable medium.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-19, 22 and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Berkowitz et al., US Patent 6,498,038.

5. With respect to claim 1, Berkowitz et al. teach a computer readable storage medium comprising computer readable program code containing a programming interface for managing and conducting fast replication operations, in figure 1, where the computer readable storage medium is memory 104, which contains the program modules 106, the programming interface comprising:

an add to snapshot set function configured to add snapshot criteria to a snapshot set, in fig. 4, step 407 (AddComponents) and col. 9, lines 58-61; and

an execute snapshot set function configured to initiate a plurality of fast replications operations as specified by the snapshot set, in fig. 4, step 411 (DoSnapshotSet) and col. 10, lines 6-18.

6. With respect to claim 2, Berkowitz et al. teach the computer readable storage medium of claim 1, wherein the snapshot criteria comprises at least one data field selected from the group consisting of a source volume indicator, a target volume indicator, an auto-select target indicator, a partial volume indicator, a source extents indicator, a redundancy level indicator, and background copy indicator, in col. 8, lines 22-38, where it is disclosed that the backup components file contains the components that are to be backed up which includes where to find the data (source volume and extents).

7. With respect to claim 3, Berkowitz et al. teach the computer readable storage medium of claim 1, wherein the programming interface further comprises:

a create snapshot set function configured to create a snapshot set, in fig. 4, step 407 (StartSnapshotSet) and col. 9, lines 53-55.

a delete snapshot set function configured to delete a specified snapshot set, in fig. 4, step 431 and col. 10, lines 10-12.

8. With respect to claim 4, Berkowitz et al. teach the computer readable storage medium of claim 1, wherein the programming interface further comprises:

a remove from snapshot set function configured to delete specified snapshot criteria from the snapshot set, in col. 10, lines 51-54; and

a terminate snapshot set function configured to terminate the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 22-23.

9. With respect to claim 5, Berkowitz et al. teach the computer readable storage medium of claim 1, wherein the programming interface further comprises a get snapshot set function configured to provide information regarding a specified snapshot set, in fig. 4, step 425 (GetDeviceObject) and in col. 10, lines 32-40.

10. With respect to claim 6, Berkowitz et al. teach an apparatus for managing and conducting fast replication operations, the apparatus comprising:

a snapshot management module configured to add snapshot crieteria to a snapshot set, in figures 2 and 4, SnapShot Service 203; and

a snapshot execution module configured to initiate a plurality of fast replications operations as specified by the snapshot set, in figures 2 and 4, Writers 205.

11. With respect to claim 7, Berkowitz et al. teach the apparatus of claim 6, wherein the snapshot management module is further configured to manage snapshot criteria comprising at least one data field selected from the group consisting of a source volume indicator, a target volume indicator, an auto-select target indicator, a partial volume

indicator, a source extents indicator, a redundancy level indicator, and background copy indicator, in col. 8, lines 22-38, where it is disclosed that the backup components file contains the components that are to be backed up which includes where to find the data (source volume and extents).

12. With respect to claim 8, Berkowitz et al. teach the apparatus of claim 6, wherein the snapshot execution module is further configured to terminate the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 22-23.

13. With respect to claim 9, Berkowitz et al. teach the apparatus of claim 6, wherein the snapshot management module is further configured to manage a list of controllers associate with the snapshot set, in fig. 2, Providers 215, and described in col. 4, lines 11-52.

14. With respect to claim 10, Berkowitz et al. teach the apparatus of claim 6, wherein the snapshot management module is further configured to create a snapshot set and delete a specified snapshot set, in fig. 4, step 407 (StartSnapshotSet) and col. 9, lines 53-55, and in fig. 4, step 431 and col. 10, lines 10-12.

15. With respect to claim 11, Berkowitz et al. teach the apparatus of claim 6, wherein the snapshot management module is further configured to delete specified snapshot criteria from the snapshot set and the snapshot execution module is further configured to terminate the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 51-54 for the removal, and col. 10, lines 22-23 for the termination.

16. With respect to claim 12, Berkowitz et al. teach the apparatus of claim 6, wherein the snapshot management module is further configured to provide information regarding

a specified snapshot set, in fig. 4, step 425 (GetDeviceObject) and in col. 10, lines 32-40.

17. With respect to claim 13, Berkowitz et al. teach an apparatus for managing and conducting fast replication operations, the apparatus comprising:

means for adding snapshot criteria to a snapshot set, in fig. 4, step 407 (AddComponents) and col. 9, lines 58-61; and

means for initiating a plurality of fast replications operations as specified by the snapshot set, in fig. 4, step 411 (DoSnapshotSet) and col. 10, lines 6-18.

18. With respect to claim 14, Berkowitz et al. teach the apparatus of claim 13, further comprising:

means for managing a list of controllers associated with the snapshot set, in fig. 2, Providers 215, and described in col. 4, lines 11-52;

means for creating the snapshot set, in fig. 4, step 407 (StartSnapshotSet) and col. 9, lines 53-55;

means for deleting a specified snapshot set, in fig. 4, step 431 and col. 10, lines 10-12;

means for removing specified snapshot criteria from the snapshot set, in col. 10, lines 51-54;

means for terminating the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 22-23; and

means for providing information regarding a specified snapshot set, in fig. 4, step 425 (GetDeviceObject) and in col. 10, lines 32-40.

19. With respect to claim 15, Berkowitz et al. disclose the apparatus of claim 13, further comprising means for managing snapshot criteria comprising data fields selected from the group consisting of a source volume indicator, a target volume indicator, an auto-select target indicator, a partial volume indicator, a source extents indicator, a redundancy level indicator, and background copy indicator, in col. 8, lines 22-38, where it is disclosed that the backup components file contains the components that are to be backed up which includes where to find the data (source volume and extents). A sample backup components file is found in Appendix C and Appendix D. This is means for providing any of the indicators listed in claim 15.

20. With respect to claim 16, Berkowitz et al. disclose a method for managing and conducting fast replication operations, the method comprising:

adding snapshot criteria to a snapshot set, in fig. 4, step 407 (AddComponents) and col. 9, lines 58-61; and

initiating a plurality of fast replication operations as specified by the snapshot set, in fig. 4, step 411 (DoSnapshotSet) and col. 10, lines 6-18.

21. With respect to claim 17, Berkowitz et al. teach the method of claim 16, wherein the snapshot criteria comprises at least one data field selected from the group consisting of a source volume indicator, a target volume indicator, an auto-select target indicator, a partial volume indicator, a source extents indicator, a redundancy level indicator, and background copy indicator, in col. 8, lines 22-38, where it is disclosed that the backup components file contains the components that are to be backed up which includes where to find the data (source volume and extents).

22. With respect to claim 18, Berkowitz et al. teach the method of claim 16, further comprising conducting an operation selected from the group consisting of:

creating the snapshot set, in fig. 4, step 407 (StartSnapshotSet) and col. 9, lines 53-55;

deleting a specified snapshot set means for deleting a specified snapshot set, in fig. 4, step 431 and col. 10, lines 10-12;

providing information regarding a specified snapshot set, in fig. 4, step 425 (GetDeviceObject) and in col. 10, lines 32-40;

deleting specified snapshot criteria from the snapshot set, in fig. 4, step 431 and col. 10, lines 10-12; and

terminating the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 22-23.

23. With respect to claim 19, Berkowitz et al. teach the method of claim 18, wherein adding snapshot criteria to a snapshot set is conducted using an API, in col. 4, lines 2-5.

24. With respect to claim 22, Berkowitz et al. teach the method of claim 16, further comprising managing a list of controllers associated with the snapshot set, in fig. 2, Providers 215, and described in col. 4, lines 11-52.

25. With respect to claim 26, Berkowitz et al. teach a computer readable storage medium comprising computer readable program code for managing and conducting fast replication operations, the program code configured to:

add snapshot criteria to a snapshot set, in fig. 4, step 407 (AddComponents) and col. 9, lines 58-61; and

initiate a plurality of fast replications operations as specified by the snapshot set, in fig. 4, step 411 (DoSnapshotSet) and col. 10, lines 6-18.

26. With respect to claim 27, Berkowitz et al. teach the computer readable storage medium of claim 26, wherein the computer readable program code is further configured for managing snapshot criteria comprising data fields selected from the group consisting of a source volume indicator, a target volume indicator, an auto-select target indicator, a partial volume indicator, a source extents indicator, a redundancy level indicator, and background copy indicator, in col. 8, lines 22-38, where it is disclosed that the backup components file contains the components that are to be backed up which includes where to find the data (source volume and extents).

27. With respect to claim 28, Berkowitz et al. teach the computer readable storage medium of claim 26, further comprising computer readable program code configured to:

manage a list of controllers associated with the snapshot set, in fig. 2, Providers 215, and described in col. 4, lines 11-52;

remove specified snapshot criteria from the snapshot set, in col. 10, lines 51-54;

terminate the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 22-23; and

provide information regarding a specified snapshot set, in fig. 4, step 425 (GetDeviceObject) and in col. 10, lines 32-40.

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

30. Claims 20-21 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkowitz et al. as applied to claims 1-19, 22 and 26-28 above, and further in view of Ohran, US Patent 5,835,953.

31. With respect to claim 20, Berkowitz et al. teach all other limitations of the parent claims as discussed supra, but fail to teach that the backup storage device can comprise multiple volumes. Ohran teaches a method wherein adding snapshot criteria to a snapshot set and initiating a plurality of fast replication operations as specified by the snapshot set are conducted across multiple volumes and multiple controllers, in fig. 1, backup storage 24 and col. 8, lines 31-33.

32. It would have been obvious to one of ordinary skill in the art, having the teachings of Berkowitz et al. and Ohran before him at the time the invention was made,

to modify the backup storage system and method of Berkowitz et al. with the backup storage system of Ohran in order to either replicate the host's storage system, which will increase the speed as to which data is backed up, or to be able to store a larger quantity of information, as taught by Ohran in col. 9, lines 28-40.

33. With respect to claim 21, Berkowitz et al. teach all other limitations of the parent claims as discussed supra, but fail to teach a plurality of servers. Ohran teaches a method where initiating a plurality of fast replication operations may be conducted by any one of a plurality of servers in a storage system, in fig. 1, primary systems 22. It is disclosed in col. 8, lines 11-13 it is disclosed that the primary system can be a server.

34. It would have been obvious to one of ordinary skill in the art, having the teachings of Berkowitz et al. and Ohran before him at the time the invention was made, to modify the backup storage system and method of Berkowitz et al. with the backup storage system of Ohran in order to either replicate the host's storage system, which will increase the speed as to which data is backed up, or to be able to store a larger quantity of information, as taught by Ohran in col. 9, lines 28-40.

35. With respect to claim 23, Berkowitz et al. teach a system for managing and conducting fast replication operations, the system comprising:

a storage volume configured to store data, in fig. 2, backup media 230.

at least one storage controller configured to manage the storage volumes, in fig. 2, Providers 215, and described in col. 4, lines 11-52.

at least one storage controller further configured to add snapshot criteria to a snapshot set and initiate a plurality of fast replications operations as specified by the snapshot set, in fig. 2, Providers 215, and described in col. 4, lines 11-52..

Berkowitz et al. fail to teach that the storage device can be a plurality of storage volumes. Ohran teaches that the backup storage device can be a plurality of storage volumes in fig. 1, backup storage 24 and col. 8, lines 31-33.

36. It would have been obvious to one of ordinary skill in the art, having the teachings of Berkowitz et al. and Ohran before him at the time the invention was made, to modify the backup storage system and method of Berkowitz et al. with the backup storage system of Ohran in order to either replicate the host's storage system, which will increase the speed as to which data is backed up, or to be able to store a larger quantity of information, as taught by Ohran in col. 9, lines 28-40.

37. With respect to claim 24, Berkowitz et al. teach the system of claim 23, wherein the at least one storage controller is further configured to manage snapshot criteria comprising data fields selected from the group consisting of a source volume indicator, a target volume indicator, an auto-select target indicator, a partial volume indicator, a source extents indicator, a redundancy level indicator, and background copy indicator, in col. 8, lines 22-38, where it is disclosed that the backup components file contains the components that are to be backed up which includes where to find the data (source volume and extents).

38. It would have been obvious to one of ordinary skill in the art, having the teachings of Berkowitz et al. and Ohran before him at the time the invention was made,

to modify the backup storage system and method of Berkowitz et al. with the backup storage system of Ohran in order to either replicate the host's storage system, which will increase the speed as to which data is backed up, or to be able to store a larger quantity of information, as taught by Ohran in col. 9, lines 28-40.

39. With respect to claim 25, Berkowitz et al. teach the system of claim 23, wherein the at least one storage controller is further configured to:

manage a list of controllers associated with the snapshot set, in fig. 2, Providers 215, and described in col. 4, lines 11-52;

remove specified snapshot criteria from the snapshot set, in col. 10, lines 51-54;

terminate the plurality of fast replications operations specified by the snapshot set, in col. 10, lines 22-23; and

provide information regarding a specified snapshot set, in fig. 4, step 425 (GetDeviceObject) and in col. 10, lines 32-40.

40. It would have been obvious to one of ordinary skill in the art, having the teachings of Berkowitz et al. and Ohran before him at the time the invention was made, to modify the backup storage system and method of Berkowitz et al. with the backup storage system of Ohran in order to either replicate the host's storage system, which will increase the speed as to which data is backed up, or to be able to store a larger quantity of information, as taught by Ohran in col. 9, lines 28-40.

Conclusion

41. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar backup storage systems.

42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Dare whose telephone number is (571)272-4069. The examiner can normally be reached on Mon-Fri 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571)272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan A. Dare
November 10, 2005

MATTHEW D. ANDERSON
PRIMARY EXAMINER